Sandy Bottom Pond
2008

Sandy Bottom Nature Park consists of 465 acres of land that provides a sanctuary from the commercial development of the Hampton area. The park was established in the early 1990s. It provides various activities for the outdoor enthusiast. There are trails for biking, hiking, and horse riding. Facilities include boat rental, a fishing pier, picnic areas, nature center, wildlife center, primitive camping areas, and tent cabins. The park is home for the 12-acre Sandy Bottom Pond. The pond was formed from an old borrow pit that was originally excavated for construction of Interstate 64. Sandy Bottom Pond provides fishing opportunities for park visitors.

The Virginia Department of Game and Inland Fisheries sampled Sandy Bottom Pond on April 9, 2007. A full community sample was conducted to observe the present fishery. Sandy Bottom Pond was last sampled on May 5, 2005. The electrofishing effort of 1,500 seconds (0.42 hours) was used to attain a representative sample of the present fishery. A complete circuit of the shoreline was conducted with the water temperature at 15.6°C (60°F). Electrofishing efforts consisted of shocking along the shoreline habitat as close as possible, with the majority of the effort concentrated in the 2 to 5 foot depth range. Being that the pond was constructed from an old borrow pit, the shoreline drops off pretty quickly. Efforts were made to stick to the bank and shoreline brush as close as possible. A total of only 6 fish species were collected with the majority of the sample consisting of bluegill and largemouth bass.

Sandy Bottom Pond provides a limited bass fishery. A total of 33 largemouth bass were collected. The CPUE (Catch Per Unit of Effort) for largemouth bass was 79.2 bass/hr. This catch rate is similar in comparison to other waters within the region, but one must remember that the CPUE is an expanded number as only 33 bass were collected. The catch rate is lower than the 2005 sample (N = 37 and CPUE 83.25 bass/hr). The size distributions of the collected bass can be seen on the enclosed length frequency graphs. The majority of the bass sample consisted of bass in the 15 to 18 inch range. This grouping of older bass most likely represents a combination of a few year-classes. The high proportion of bass in this size range (25 of 33 bass, 75.8%) shows what the average fisherman will most likely be catching. Only four bass less than 13 inches in length were collected. The 2007 survey reflects the same poor recruitment seen during the 2005 survey. It appears that the last three to four years of recruitment have been extremely poor. The low abundance of juvenile bass does not bode well for the future of the bass

population. A balanced bass population has a sufficient number of juvenile bass from various year classes. These bass provide the valuable stock needed to replace older bass that die from natural mortality. Taking into account the lack of smaller bass, the average sized bass was an impressive 15 inches. Our sampling efforts are just a representative picture of the fish community collected along the shoreline on April 9, 2007. There may be larger bass that eluded the shocking boat by hanging in deeper water or escaping from the field in the clear water. The bass we did collect were holding tight to the cover of the shoreline brush.

Figure 1. Length frequency of largemouth bass collected from Sandy Bottom Pond on April 9, 2007 (N = 33, CPUE 79.2/hr)

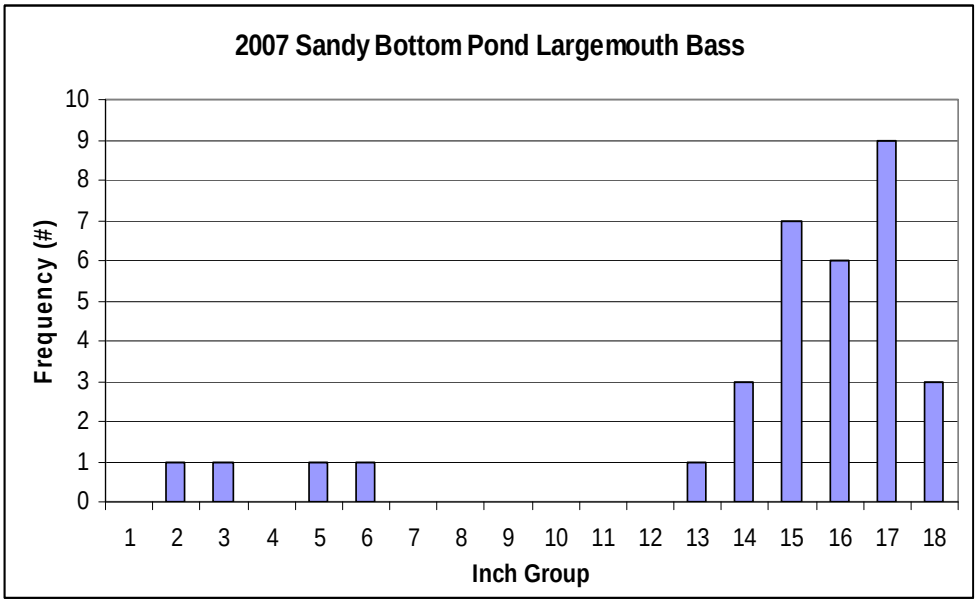
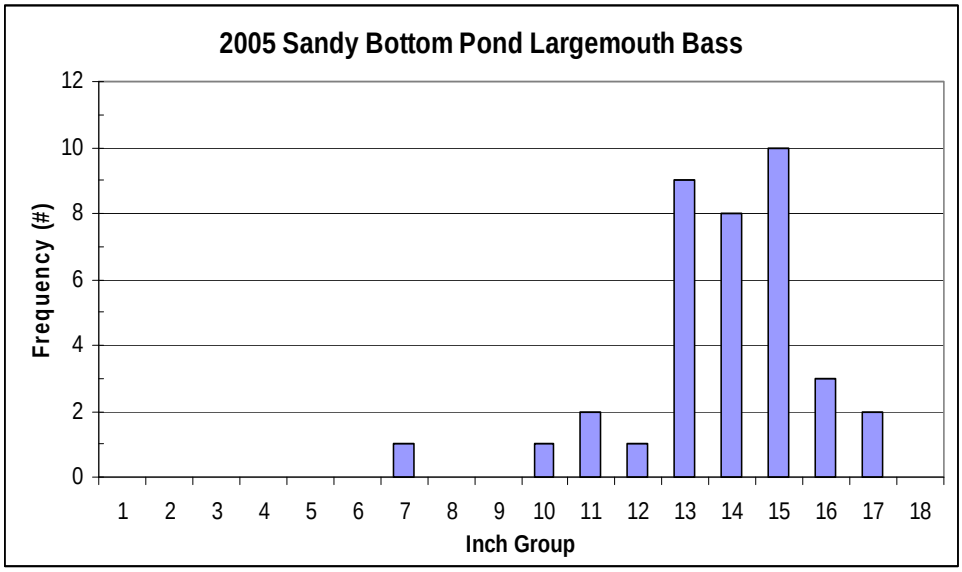


Figure 1. Length frequency of largemouth bass collected from Sandy Bottom Pond on May 5, 2005 (N = 37, CPUE 83.25/hr)



With largemouth bass being the most popular game fish in this country, it has been considered that a “preferred” bass is one that is over 15 inches in length. It is through this size classification that population dynamics are analyzed. The PSD (Proportional Stock Density) is the proportion of bass in the population over 8 inches (stock size) that are also at least 12 inches. The sample showed an extremely high PSD value of 100, which is a direct reflection of the 29 bass that were 30 centimeters or longer. The value of 100 showed that all adult bass are rather large. It is not a perfect score as it represents the fact that no bass in the 8 to 12 inch range were collected. The sample had a total of 29 bass that were of quality-size or larger. A balanced bass/bluegill fishery has a bass PSD value within the 40 – 70 range. The RSD-P (Relative Stock Density of Preferred bass) is the proportion of bass in the population over 8 inches that are also at least 15 inches. The RSD-P value of 86 is a direct reflection of the 25 preferred fish being collected. A RSD-P value within the 40 to 50 range would represent more of a balanced bass population. The 2007 PSD and RSD-P values are much higher than the 2005 values (PSD = 92, RSD-P = 42).

Weights were taken on largemouth bass to calculate relative weight values. Relative weight values are an indication of body condition. A value from 95 to 100 represents a fish that is in the healthy range and finding a decent amount of food. A higher relative weight value indicates fish with a better body condition. The overall relative weight value was 99. The relative weight values for stock, quality, and preferred bass (>8”, >12”, and >15”) were 99, 99 and 98 respectively. These relative weight values show a great increase when compared to the 2005 survey. The 2005 survey revealed bass with relative weight values were 84, 84 and 85 for stock, quality and preferred-sized fish. The bass are successfully finding enough prey items to forage upon. The bluegill population has expanded over the last two years to provide additional forage for the bass. The largest bass measured 18.5 inches and weighed 3.4 pounds.

Sandy Bottom Pond has a bluegill fishery that is dominated by fish less than 5 inches in length. Our electrofishing effort collected 155 bluegills. The expanded CPUE of 372 bluegills/hr showed a marked improvement from the 2005 survey (N = 48, CPUE 108 bluegills/hr). The size distributions can be seen on the attached length frequency graphs. Bluegills ranged in size from 2 to 16 centimeters (1 – 6 inches). The majority of the bluegills were within the 7 to 12 centimeter range (100/155, 64.5%). The PSD for bluegill is the proportion of bluegill over 8 cm (stock size) that are also at least 15 cm (quality size). The bluegill PSD of 5 is a reflection of only 5 quality-sized bluegills in the 6 to 6.5 inch range. The PSD value is below the optimal PSD range of 20 to 40 that would represent a balanced fishery. A total of 97 stock-sized bluegills were collected. A decent number of young bluegills in the 2 to 5 cm range (1 – 2 inches) were collected. These fish represent some survival from the 2006-year class.

Figure 3. Length frequency of bluegills collected from Sandy Bottom Pond on April 9, 2007. (N = 155, CPUE = 372/hr)

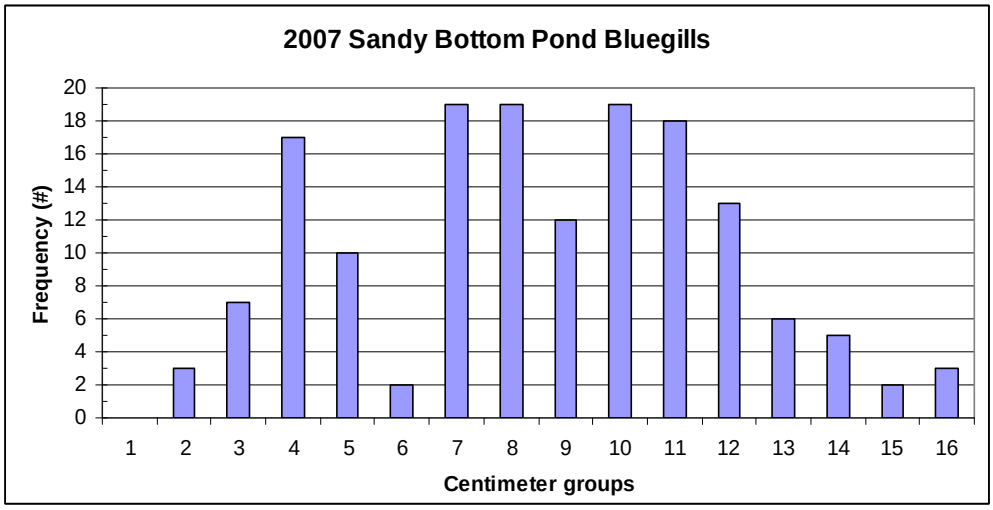
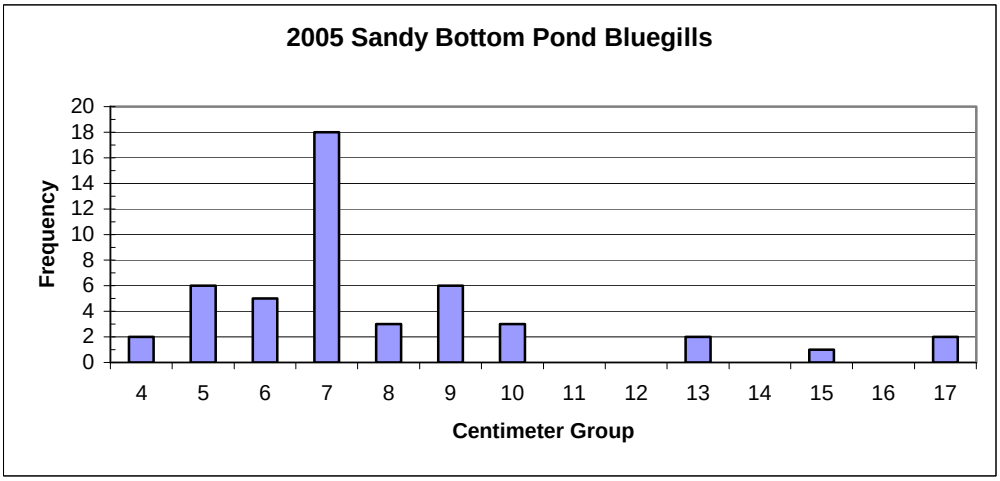


Figure 4. Length frequency of bluegills collected from Sandy Bottom Pond on May 5, 2005. (N = 48, CPUE = 108/hr)



No black crappies were collected during the 2005 and 2007 surveys. Twelve juvenile black crappies were present in the 2002 sample. Black crappies tend to school in deeper water more than largemouth bass and bluegill. This makes it difficult to draw too many conclusions on the strength of the crappie population. If the population was really abundant, we most likely would have collected a few along the deeper edges of the shoreline cover.

The pond's fishery has a little more diversity in the form of warmouth, pumpkinseed sunfish, American eel and eastern mudminnow. Only one warmouth of 3.15 inches was collected. One 6.25-inch pumpkinseed sunfish was collected. A 2-inch eastern mudminnow was collected. A total of 13 American eels were collected and measured. They ranged in size from 8 to 24.4 inches. Numerous additional eels were seen along the

shoreline while we sampled. Eels have a tendency of escaping from the outside edge of the electric field.

Sample Summary

The electrofishing sample of Sandy Bottom Pond showed a fishery consisting of 6 fish species. The largemouth bass population appears to be out of balance with only a few small bass collected. The bass population is centered on a group of older bass that have managed to survive to reach the 15 to 18 inch range. The average-sized bass measured 15 inches in length. This is a great average size for a small pond, but the average benefits from the low abundance of small bass. The overall catch of only 33 largemouth bass from a complete shoreline electrofishing run is rather low. The bass population has seen a major increase in the relative weight values. The collection of 25 preferred-sized bass (15 inches or greater) was impressive. The pond has seen poor bass recruitment over the last three to four years. This is an area of major concern. Numerous variables can come into play to explain the weak year classes. The low productivity of the pond can yield low concentrations of zooplankton during the spring. This would hamper the survival of bass fry. The presence of numerous American eels can only have a detrimental impact upon the bass and bluegill populations. American eels are opportunistic feeders as I am sure they have been feeding upon their fair share of juvenile bass and bluegill. I would recommend that anglers release all largemouth bass to protect the current population. The bluegill population appears to have greatly expanded over the course of time between samples. The majority of the bluegills were within the 3 to 5 inch range with very few bluegills larger than 6 inches collected.

The park is open from sunrise to sunset every day except for Christmas; however the fishing pier is open to pedestrians for fishing 24 hours a day. The park is located at 1255 Big Bethel Road, a few minutes from I-64 by way of the Hampton Roads Center Parkway West exit. Please call the park office at (757) 825-4657 or try their website at www.hampton.va.us/sandybottom for additional information.

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